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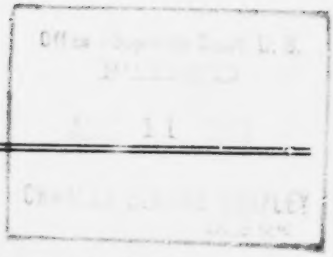

Supreme Court of the United States

No. 6, October Term, 1941.

THE AUTOMATIC DEVICES CORPORATION,
Petitioner,

vs.

SINKO TOOL & MANUFACTURING COMPANY,
Respondent.

BRIEF FOR PETITIONER ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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October Term, 1941
No. 6

BRIEF FOR PETITIONER ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

Opinions of the Courts Below.

The opinion of the Court of Appeals for the Seventh Circuit (holding Claims 2, 3 and 11 of the Mead patent in suit invalid and not infringed) is reported in 112 Fed. (2d), 335, and appears at pp. 502-517 of the Record. The opinion of the District Court (holding the same claims of the Mead patent valid and infringed) is not reported, but appears at pp. 239-241 of the Record and an amendment thereto at pp. 255-6 of the Record.

A conflicting decision (subsequent to that of the Court of Appeals for the Seventh Circuit) of the Court of Appeals for the Second Circuit in *The Automatic Devices Corporation* v. *Cuno Engineering Corporation* (holding the same claims of the Mead patent valid and infringed) is reported 117 Fed. (2d), 361. This decision reversed the decision of the District Court for the District of Connecticut, reported 34 F. Supp., 146, holding the Mead claims not infringed.

Jurisdiction.

This action is before this Court on writ of certiorari granted by this Court on March 31, 1941 (R. 570).

The decree to be reviewed was entered April 27, 1940 (R. 517).

Petitioner presented to this Court a petition for writ of certiorari with brief and record. It was filed on July 24, 1940, and denied by this Court on October 14, 1940. Thereafter, on March 24, 1941, petitioner presented to the Court a motion for leave to file a petition for rehearing of said petition for writ of certiorari. On March 31, 1941, petitioner's said motion, petition for rehearing and petition for certiorari were granted by this Court (R. 570).

The jurisdiction of this Court is founded on Sec. 240 (a) of the Judicial Code as amended by the Act of February 13, 1925 (28 U. S. C. A. §347).

Summary of Argument.

1. The claimed Mead invention is for an automatic wireless cigar lighter such as now extensively used on automobiles.

2. Mead was the first in the art to produce an automatic wireless cigar lighter.

3. Mead's claimed combination was neither shown nor suggested by the prior art.

4. The Copeland patents are ineffective as defenses against the validity of the Mead patent.

5. The extensive use of the Mead invention in commercial cigar lighters demonstrates its great utility and importance in the art.

6. The decision of the Court of Appeals for the Second Circuit in petitioner's case against Cuno Engineering Com-

pany (117 Fed. (2d), 361), holding the Mead claims "valid as they read" should be affirmed; and the decision of the Court of Appeals for the Seventh Circuit, holding the Mead claims invalid, should be reversed.

Statement of Case.

This action in equity was brought in the District Court of the United States for the Northern District of Illinois, Eastern Division, by petitioner, The Automatic Devices Corporation, a Connecticut corporation, against Sinko Tool & Manufacturing Company, respondent, an Illinois corporation, for infringement upon claims numbered 2, 3 and 11 of Letters Patent of the United States No. 1,736,544, granted November 19, 1929 on the application of H. E. Mead, filed August 24, 1927, for cigar lighters. (R. 238). Other patents were sued upon but they are not before this Court.

Respondent is engaged in the manufacture and sale of automatic wireless cigar lighters (drawing, plaintiff's Exhibit 1, R. 25, offered R. 29; physical exhibit, Plaintiff's Exhibit 2, offered R. 29), charged to infringe upon claims 2, 3 and 11 of the Mead patent.

Petitioner seeks review of the decree (R. 517) of the United States Circuit Court of Appeals for the Seventh Circuit which reversed the decree of the District Court holding claims 2, 3 and 11 of the Mead patent valid and infringed (R. 262) and held these claims invalid and not infringed.

The decree and determination of the Circuit Court of Appeals for the Seventh Circuit is in conflict with the decree and determination made later by the United States Circuit Court of Appeals for the Second Circuit made in an action brought by petitioner against Cuno Engineering Corporation in the District Court of the United States for

the District of Connecticut. The opinion of the Court of Appeals for the Second Circuit in this Cuno case holding claims 2, 3 and 11 of the Mead patent valid and infringed is reported in 117 Fed. (2d) 361, and that of the District Court, which held these claims of the Mead patent not infringed, is reported in 34 F. Supp. 144.

This Court granted certiorari in this action "limited to the question whether claims 2, 3 and 11 of the Mead patent No. 1,736,544 are valid" by its order dated March 31, 1941 (R. 570, 311 U. S., Advanced Sheets, No. 4, p. VII).

This Court also granted a petition for writ of certiorari to the United States Circuit Court of Appeals for the Second Circuit in the said action brought by petitioner against Cuno Engineering Corporation, No. 37 October Term, 1941, and ordered that it be placed on the calendar following the case at bar. The order granting petition for certiorari in this Cuno case is of the same tenor as in the case at bar: that is, as to the validity of claims 2, 3 and 11 of the Mead patent.

Assignment of Errors.

The errors relied upon are (1) that the United States Circuit Court of Appeals for the Second Circuit erred in holding that claims 2, 3 and 11 of the Mead Patent No. 1,736,544 are invalid and in not holding said claims of the Mead patent valid, and (2) that it erred in holding claims 2, 3 and 11 of the Mead Patent No. 1,736,544 of less scope than their terms import.

ARGUMENT

The Invention of the Patent in Suit.

The Mead patent (R. 283), which relates to improvements in wireless electric cigar lighters of the type now extensively used on automobiles, discloses the first *automatic* wireless cigar lighter. Mead started work on his novel arrangement in the Spring of 1926 and constructed a model at that time (R. 148). He filed his application on August 24, 1927, and received the patent on November 19, 1929.

A substantial number of these automatic wireless cigar lighters were manufactured and sold by the S. T. Jessop Company, Inc., of Chicago, Illinois under the trade name of Jesco Automatch (R. 178, 196).

After acquiring rights under the Mead patent, Casco Products Corporation, petitioner's licensee, reorganized the construction and details of the design of the Mead lighter and successfully marketed it as "Casco" automatic wireless lighter as exemplified by Plaintiff's Exhibit 3 (offered R. 29).

A *wireless* cigar lighter is one in which an electrical glow member or igniter coil carried by a *removable* plug or igniting unit is brought to incandescence while mounted on a holding device socket by manually changing the position of the plug so as to close a circuit leading to the igniter coil, after which the plug with the coil is bodily taken by hand from the holder in which it normally rests and the hot coil applied to the cigar or pipe or cigarette held in the mouth of the user. The plug has no wires or other means connecting it with the holder when removed for use (hence the name "wireless" or "cordless"); the heat stored in the coil, coupled with suction applied to the cigar, cigarette or pipe by the smoker, igniting it. Thus far the device was old at Mead's date.

Although the first wireless cigar lighter was patented by Morris (Patent No. 1,376,154—R. 545, offered by stipulation, R. 59) in 1921, it did not make great inroads on the old reel wound cord type lighter until 1928 (Rec. 68) when petitioner's licensee, Casco Products Corporation, introduced its wireless lighter which car manufacturers soon began to adopt as standard equipment on their cars (Rec. 69). A succinct statement of the progress of the art up to Mead is to be found in the decision of the Court of Appeals of the Second Circuit in the Cuno case (Case No. 37), 117 Fed. (2d) 361, 362.

In all wireless lighters prior to Mead, the operator closed the energizing circuit by manually operating the igniter plug against the tension of a spring normally holding the circuit open. This was done, for example, either by moving the plug bodily, as in Morris (Rec. 545), or by moving a button on the plug, as in Zecchini (Rec. 545). To keep the circuit closed, the operator had to hold the plug by hand for some eight to fifteen seconds, until, depending upon experience or guesswork, he thought the coil heated and ready for use, whereupon he pulled out the plug and used it in lighting a cigar or a pipe.

Mead was the first to make the wireless cigar lighter *automatic*. He did this, first, by making it unnecessary to keep the hand on the plug while the coil is heating up; second, by automatically opening the circuit (and keeping it open) immediately upon the igniter coil reaching the predetermined temperature for use, and, third, by indicating that the device is ready for use by the return of the manually operated part to normal position and the resulting sound produced thereby.

Stated more specifically, Mead accomplished these results by returning the plug and its circuit-closing contact to normal open-circuit position by automatic means responsive to the temperature of the igniter coil.

The practical advantages of these improvements are self-evident. They permit the driver of an automobile to use

both hands for driving purposes, except for the split second required to initiate the heating operation (operating the knob of the plug) and subsequently—when advised by the plug's automatic change of position and its accompanying "click"—to remove the plug and coil for use. They insure that the igniter coil is just the right temperature for use, neither too hot nor too cold, and thus elimiaate guesswork attendant upon the use of the manually controlled lighter. And they avoid overheating and burning out of the igniter coil.

Mead's illustrated embodiments of his invention, like almost every primary improvement showed the way for others to proceed beyond his attainment by improving details. For instance, Mead employed rotary motion of the plug instead of the longitudinal motion of the plug (Morris), or a part of it (Zecchini) to close the circuit. These were all clear equivalents.

Bundy Mfg. Co. v. *Detroit Time-Register Co.*, 94 F. R., 524—C. C. A., Sixth Circuit.

Mead's device was comparatively large and cumbersome and not adapted for use as standard equipment on cars. That later developed to be the principal market (R. 73). The lighter must be on the car when sold. Mead, as illustrated, would take up more room upon the instrument-board than automobile manufacturers were able to assign for it (R. 69). Nevertheless, he *did* teach the wireless cigar lighter art how to make the lighter both automatic and effective in the respects above stated, and every such automatic lighter since marketed has embodied his teachings in principle and mode of operation.

Within his field, Mead was a primary improver, since for the first time in the art he obtained a wireless cigar lighter with automatic operation.

Soon after Mead's automatic lighter came upon the market, it came to the notice of Mr. Cohen, then and now the President of Casco, petitioner's licensee. The evidence shows (R. 68-69) that he immediately recognized the

merits of the Mead device and resolved to incorporate the Mead invention, with its automatic operation, in cigar lighters of the "push-in" type, which by that time were enjoying substantial acceptance by the public and by car manufacturers (R. 68, 69).

In due course, rights under the Mead patent were acquired and experiments were carried on to incorporate the Mead invention in a cigar lighter of the push-in (as distinguished from rotary) type which would meet the car manufacturer's requirements in regard to small size, to fit the small hole they assigned it in the instrument panel, and which at the same time would be susceptible of large production at a low price and "faultless" in operation (R. 69, 70).

This being done, the resulting Casco automatic cigar lighter was put on the market (R. 76). One after another of the car manufacturers adopted it as its standard equipment (R. 74, 75), and in a few years this automatic cigar lighter practically displaced the non-automatic type, as shown by the chart, Plaintiff's Exhibit 19 (offered R. 71), which shows that by 1938 out of a total of 1,159,253 wireless cigar lighters sold by the Casco Corporation, 977,393, or about eighty-four per cent, were of the automatic type in spite of the fact that the wholesale prices to car manufacturers were from ten to fifteen cents per lighter higher for the automatic than for the non-automatic lighters (R. 272, 273).

Respondent has also been in the wireless cigar lighter business practically contemporaneously with Casco (R. 76-77).

When the automatic lighter manufactured by Casco began to displace the non-automatic, respondent became restive and attempted in 1937 (R. 104, 105) to market a so-called "Instantaneous" wireless cigar lighter (Pl. Ex. 38, offered R. 191-192), which, while partially thermostatically controlled, did not have the automatic hold-in and release

features of Mead. Finally in 1938 (R. 104) respondent, having failed to market the "Instantaneous" lighter, began to make the accused device (Pl. Ex. 2, offered R. 29) in disregard of petitioner's rights. The accused device embodies the teachings, the principles, and the mode of operation of the Mead invention.

As we view it, the Court of Appeals for the Seventh Circuit failed to recognize the primary character of the Mead invention and read into the claims limitations which were not necessary to give validity to them, and which, in fact, were specifically included in other claims not in issue, and as a result held the claims in issue to details neither stated in them nor essential to their embodiment. Even as so narrowly construed they were held lacking in invention.

Apparently, the Court of Appeals for the Seventh Circuit did not visualize the situation at the time of Mead's invention, in order to ascertain what Mead's advance really was; but, rather, viewed Mead from the light of present developments.

The fact is incontrovertible that the art had missed entirely what Mead did and was concentrating on detail improvements of the non-automatic lighter—the lighter that then held the market.

The Mead Patent in Suit.

In the illustrative example of the invention disclosed in his patent (R. 280-281), Mead showed a wireless type cigar lighter consisting of the holding device (Fig. 1) and the removable igniter unit or plug (Fig. 8).

The holding device has two terminals, namely, the socket member 41 and the spring terminal 52, connected to opposite poles of a battery by the wires 57 and 58 respectively. The socket 41 supports the igniting unit on the base 34 and is rotatably mounted thereon in order that a contact 75 carried by the igniter unit may be moved into circuit-closing position (Fig. 14).

The igniter unit has an igniter resistance coil 83 connected at its outer end with a cup 82 in engagement with the shell contact 65. The inner end of the igniter coil 83 is connected through the stud 84 to the contact pin 75 radially extending through the shell 65 but insulated therefrom. The igniter unit, when carried by the socket in normal position on the holding device (Fig. 16) has its contact shell 65 engaging the socket of the holding device, but the contact 75 does not touch the terminal 52. Hence, the circuit is open.

To initiate operation of the cigar lighter, the igniting unit is manually turned by means of its protruding knob 62 from the position shown in Fig. 16 to the position shown in Fig. 14 until the contact 75 is caught by the detent 53 of the spring terminal 52, thereby establishing an electrical connection from the battery through the igniter coil 83 so that the latter may start to heat.

As the igniting unit contact is moved into closed-circuit position (Fig. 16), the movement of the socket causes a spring 47 to become tensioned so that it will return the igniter unit contact and socket to the "off" position upon release of the contact.

The spring terminal 52 is held in the position shown in Fig. 14 by means of an auxiliary spring 54. The holding action of the spring detent 52, 53, which is reenforced by the spring 54, is in opposition to the action of the spring 47 tending to move the igniter unit to the "off" position shown in Fig. 16.

The Mead patent specification (page 3, line 112 to page 4, line 11; R. 285-286), brings out that either spring 54 or spring 47, or both, may be made of bimetallic material and so located with respect to the igniter coil that the heat from the coil acts on the bimetallic spring 54 to weaken it or on the bimetallic spring 47 to strengthen it, with the result that when the igniter coil reaches the predetermined temperature for use, the return spring 47 becomes effective

to move the igniter unit contact 75 to the "off" position shown in Fig. 16, out of engagement with the terminal 52. The spring 47, cooperating with the socket supporting the igniting unit, keeps the igniter unit contact permanently in its open-circuit position in which even when the bimetallic means cools off, the contact 52 will not touch the contact 75 until it is again manually moved to closed-circuit position.

To operate Mead's device, therefore, it is merely necessary to operate the knob 62 (by rotating it in the form of the invention shown) until the circuit-closing contact 75 is caught by the heat-controlled detent 53 where it will remain temporarily latched by the latter without further action or attention by the operator. As soon as the igniter coil 83 is brought to the desired temperature for use as predetermined by the setting of the bimetallic elements, the bimetallic elements heated from the heating element cause the contact pin 75 to be released from the detent 53 and moved to open-circuit position.

The return of the knob to open-circuit position is accompanied by a click, and both movement and sound indicate that the igniter coil is at the proper temperature, and that the igniter with the heat-storing resistance coil may be manually removed from the socket and applied to the cigarette like a hot coal or ember.

The igniter plug is restored to the socket after use, and is retained in open-circuit position until the next operation.

With Mead's invention, the operator may use both hands for driving and devote his entire attention thereto, during the heating-up period—contrasted with one-hand driving for eight to fifteen seconds required with all prior wireless lighters; the igniter coil is just hot enough for use when the circuit is automatically opened and the signal given—contrasted with close observation or guesswork previously necessary; over-heating or burning out of the igniter coil with its attendant dangers is prevented—for which there was no previous protection in wireless lighters; and, lastly, should the operator fail to remove the igniter after the

igniter coil is hot, no harm can result because the circuit is automatically opened and will not again close until the operator manually moves the igniter to the "on" position (R. 68-69).

These were new and important advantages which seem to us to support patentability. That there is *novelty* is, we think, undisputable. That there is *utility* is fully established.

Mead's patent is not a "paper patent", for his lighters, substantially as illustrated in the patent, were made and sold for several years by Mead's assignee the Jessop Company (R. 174). The sales were of a substantial number (R. 178).

Manufacture of these lighters was stopped after several years, because the manufacturer—a struggling company in other business also—failed (R. 178). Plaintiff's Exhibit 7, offered R. 34, is a commercial sample of Mead's device.

The Mead Claims in Issue.

Claims 2, 3, and 11 of the Mead patent, which are before the Court, are as follows (R. 286-7):

> 2. In a device of the class described, a removable heating member having an electrical heating unit, a socket for receiving and holding said heating member, electrical current supply terminals, means for moving said heating member to a position for establishing an energizing circuit to said heating unit, and means responsive to the temperature of said heating unit for interrupting said energizing circuit.
>
> 3. In a lighting device for cigars and the like, a removable heating member having an electric heater, a support for receiving and holding said heating member, current supply terminals on said support, said heating member being movable on said support to a position where said heating unit is energized from said terminals and means responsive to the temperature of said heating unit for controlling the heating thereof.

> **11. In an electric lighter of the class described, a base member, a heater member movably mounted on said base member, an electric heater on said heater member, electrical supply terminals on said base member, said heater member being movable between an energized position where a circuit is established from said terminals to said heater, and an off position where said circuit is interrupted, and automatic means for withdrawing said heater member from the on position to the off position upon heating of said heater.**

These claims are couched in broad language and properly so, considering the breadth and importance of the Mead invention in the wireless cigar lighter field.

In reciting his combination Mead first broadly characterizes the wireless cigar lighter by calling for the removable heating member (the plug) and heating unit or heater (resistance coil) thereon, and the support or socket on which the bodily removable plug is mounted for movement to a position in which the resistance coil is energized from terminals on the support (claim 3). Mead then characterizes the new element of his combination in language commendably limited to the precise point of novelty to wit—"means *responsive to the temperature of said heating unit* for interrupting said energizing circuit" (claim 2) or "for controlling the heating" of the heating unit (claim 3). He limited his assertion of monopoly to the very gist of his invention, i. e., the combination with a thermostat responsive to the temperature of the heating element or glow member. That this restraint was prudent and wise is indicated by the fact that this limitation clearly distinguishes Mead's cigar lighter from that of his then unknown contemporary Copeland (R. 441), as will appear below.

In the conduct of this case, we asserted that Mead's claims did not cover every wireless cigar lighter that might have a thermostat, because Mead's claims are limited to a construction in which the thermostat is operated by the heat of the resistance coil, and in response thereto.

As will be seen from the decision of the Court of Appeals for the Seventh Circuit (R. 509), our position apparently was misunderstood and the Court interpreted it as a disclaimer that Mead was the first to use a thermostat in a wireless cigar lighter. We assert that he was the first, but we also assert that he voluntarily limited his claims to a combination in which the heat of the heating element operates and controls the operation of the heat responsive means, and therefore left free for use by the public those combinations in which the thermostat was operated in any other way.

The other aspect of Mead's invention, providing for the return of the plug to open-circuit position, is defined in claim 11. Like claims 2 and 3, it characterizes in broad language the elements of a wireless cigar lighter, pointing out that the heater member (plug) is movable between an energized position and an off position. Mead then specifies the new element of his combination as "automatic means for withdrawing said heater member from the on position to the off position upon heating of said heater". This language is justified because, prior to Mead, the plug returned to open-circuit position when and only when the operator removed his hand therefrom. It might be so hot as to endanger the mechanism itself or not hot enough to light the cigar, cigarette or pipe. While the language of claim 11 is broad, it is, nevertheless, not all-inclusive but again merely defines what Mead taught, i. e., the automatic holding of the plug in "on" position and the return of it automatically to "off" position only when the heating element is at the right temperature. His claim left open to the public and to all future inventors all other ways of opening the circuit to the igniter; he did not preempt the field.

These features of Mead's invention (1) the controlling of the energizing circuit in response to the heat of the heating element, and (2) the automatic return of the plug to open-circuit position so that the operator need not hold the circuit closed manually, are those which made for the

great commercial success of the Casco automatic lighter (exemplified by Pl. Ex. 3, offered R. 29), and are those which apparently respondent here and petitioner in Case No. 37 could not get along without in order to compete. The District Court in this case and the Court of Appeals in Case No. 37 had no difficulty with the language of the claims. In this connection, in Case No. 37, the Court of Appeals for the Second Circuit said, by Judge *Learned Hand*, 117 Fed. (2d) 361, 364:

> "The claims being valid and there being nothing in the prior art which requires it, we see no reason to circumscribe them closely to the disclosure. Verbally there is no difficulty. Invention lay in the general conception reduced, of course, to practice as shown but the range of equivalents should be as broad as the actual invention, as we have often said. There is nothing which turns primarily upon the precise details of the structure; the claims are good as they read, if good at all. We hold that they are valid and infringed."

Novelty.

The art prior to Mead is completely devoid of any automatic wireless cigar lighter. That Mead was the first to produce an automatically controlled cigar lighter having an igniting unit removable for use when automatically released cannot be disputed. There is not even a suggestion of this in the art prior to Mead.

In fact, the record shows that Mead was the first to give to the public an electric cigar lighter of any kind having thermostatic control of the heating element or glow member.

The Cigar Lighter Art Prior to Mead.

The wireless cigar lighter displaced the previously common reel type cigar lighter for use on automobiles.

In the reel type cigar lighter (exemplified by Pl. Ex. 30 in another case and stipulated into this case, R. 59), the igniting unit was connected to a source of current by a cable, the latter being wound on a spring drum so that the igniting unit and cable could be withdrawn from the drum casing and used to light a cigar, cigarette or pipe. In such devices, the circuit was closed either by a manual operation of a button on the igniter or as a result of the withdrawal of the igniter from its socket on the reel casing.

The *wireless* cigar lighter originated by *Morris*, and for which he obtained letters-patent of the United States No. 1,376,154 (Rec. 545) differed from the reel type cigar lighter in two major respects: (1) it provided for heating resistance element or glow member without removing it from its holder and (2) provided for the complete electrical and mechanical disconnection of the igniting unit from the holder so that the glow member could be applied to a cigar or the like held in the mouth of the user and the igniting unit could be passed from one person to another, even to the back of the car, without the inconvenience of the trailing wire cable employed with the reel type lighter.

The wireless cigar lighter, however, had a serious inherent disadvantage. In the reel type lighter the resistance element could be quickly brought to incandescence and could be used at once being maintained at incandescence by the continuing flow of electric current during the lighting of the cigar or the like. In the wireless cigar lighter, the resistance element, because of its mass necessary to retain its heat for subsequent use, required some time, usually eight to fifteen seconds, in which to be heated to the proper temperature and during which the operator had to manually hold the circuit closed.

Several types of wireless cigar lighters appeared on the market and in issued patents. Of these, the patents to Morris #1,376,154, Zecchini, #1,437,701, are representative of different constructions of wireless cigar lighters. Morris represents a type in which the circuit was closed by bodily movement of the igniting unit to bring contacts thereon into electrical engagement with contacts on the holder. Zecchini represents a type in which a push button on the igniter unit was pushed-in to engage cooperating contacts within the igniting unit itself.

But, regardless of the particular parts that were moved to close the circuit and heat the heating element, in all of the wireless cigar lighters prior to Mead, it was necessary for the operator manually to hold the igniting unit, or the circuit-closing part, in closed-circuit position during the heating-up period; to observe or guess when the heating element was hot enough for use; and then release the circuit-closing part so as to open the circuit.

These exemplifications of the prior art constructions will now be described:

Morris No. 1,376,154 (application filed 1919—R. 545): An igniting unit, shown in Fig. 1, is removably mounted in a holding device, shown in Fig. 3, and when normally supported thereby is in open-circuit position, shown in Fig. 4 with the terminal 7 on the holder out of engagement with the contact 17 on the igniter, so that the circuit through a carbon bar resistance 16 and leading back through the metallic parts of the device to the ground is normally open. The igniter is held in this position by a spring 28 except while the operator pushes in on the handle 15 of the igniter, to cause the contact 17 to engage the terminal 7.

The igniter resistance 16 being concealed within the device, the operator had no way of knowing when the igniter was hot enough for use, and had to depend upon experience or guesswork to determine when to relax the operating pressure on the handle 15 and remove the device for use.

Zecchini No. 1,437,701 (application filed 1921—R. 374): The igniter, shown assembled in Fig. 2, is inserted in a vertical socket having terminals 5 and 6 engaging contacts 14 and 7 respectively on the igniter. The contact 7 is connected with one end of the resistance coil 11 while the other end of the resistance 11 is connected to a contact pin 13. The other contact 14 on the igniter is electrically connected to a movable contact rod 15 carrying a push button 16. A spring 17 holds the contacts 16 and 13 apart except when the operator presses and holds down the push button 16 to close the circuit through the igniter.

Here again the igniter is concealed within the holding device, and the operator had to depend upon experience or guesswork in determining when to release his finger from the button 16.

The operation was substantially the same in each of these prior wireless cigar lighter patents. When the smoker desired a light, he pushed in on the handle of Morris (R. 545), or the push button of Zecchini (R. 374). In each case, he held the movable part in operating position until the igniter resistance was heated. With Morris and Zecchini, the smoker had to use his judgment in determining how long to keep his hand on the plug to keep the circuit closed, for he could not see the igniter resistance, and, as a result, when removed for use, the resistance might have become so hot as to be liable to burn out, or might be so cool as not to give a proper light and cause particles of tobacco to cling to the resistance, and while still glowing to fall or drop onto the smoker's clothing or the floor of the car (R. 68).

The only prior art disclosing means for automatically opening the circuit is the patent to Burnett 972,811 (R. 320). This patent is for a cigar lighter to be used on the counter of a store. There is no removable igniter unit whatever. The igniter coils 14 are brought to incandescence

on closing the circuit by manually depressing the lever 25 and holding it by hand in depressed position. As a mere safety precaution, while the lever 25 is in its depressed position, mercury is caused to run from one compartment to another as in an hourglass, and after a lapse of a given time opens the circuit if the user manually holds the lever 25 depressed too long.

Burnett's is not a wireless cigar lighter. It has no thermostatic feature. The circuit is not held closed except by hand. The opening of the circuit is in no way controlled by the heat of the igniter coil, and, of course, there is no movement of a removable igniter unit between "on" and "off" position, since there is no removable igniter unit at all.

The Thermostatic Control Art Prior to Mead.

Thermostatic controls as such were quite well known in the years 1926, 1927 when Mead made his invention. They had been used for various kinds of electrical devices, and many patents as evidenced by this Record were granted on new combinations solving particular problems and producing new and useful results.

Regarding the bearing of a similar collection of patents on the validity of the Mead claims, the Court of Appeals for the Second Circuit, in the *Cuno* Case No. 37, stated (117 F. (2nd) 361, 363):

> "The art had indeed for many years used thermostats to break a circuit when it got overcharged; such uses go back to 1893 (Hammarstrom, No. 493,380). Moreover thermostats had been installed as 'cut-outs' in tools—e. g. in sadirons—fifteen years before Mead's application was filed (Andrews No. 1,025,852). But these uses rather fortify than impair the invention; for, the more general and familiar was the use of a thermostat to cut out an over-heated member in an electric current, the more curious it is that no one should have thought of its use to remedy the known defects of 'wireless' lighters."

The prior art patents in the present record will now be briefly discussed:

Hammarstrom No. 493,380 (application filed 1892—R. 308-310): This shows a combined cutout and lightning-arrester, designed for insertion between the ends of wires F and H, the circuit between which was kept normally closed by a split circle of bimetal 1, the ends *a* of which were arranged to overlie and make contact with a spring J. An abnormal surge of current caused by lightning passing through the wires F and H, caused the bimetal split circle to become heated and expanded, the ends *a* of the ring being spread farther and farther apart until the spring J released and moved upwardly and away from the ends of the circle to open the circuit.

Hammarstrom merely suggests the employment of an overload or abnormal surge of current through the bimetallic member to open the circuit. This principle could not be used in a cigar lighter, for there is no abnormal surge of current attendant upon proper heating of the igniter coil. The best that can be said for Hammarstrom is that he teaches the use of a bimetallic contact which also serves as a latch to hold a circuit-opening part in normal circuit-closing position.

Morris and Lister No. 926,584 (application filed 1908—R. 312-317): This shows a knife switch such as is used to control the circuits of power lines. The switch blade *b* which closes a gap between the contacts *a* is moved to circuit-closing position by a handle *c*. The blade *b* has bimetallic latch members *b'* which engage a catch member *b''* when the blade is in closed-circuit position, and a current of proper value is passing through the blade. The bimetallic strips *b'* are expanded and contracted by the heat of the current passing through the blade *b*. When the circuit is overloaded, the strips *b'* heat up and disengage the catch *b''* so that a spring *g* may return the blade *b* for the purpose

of breaking the circuit quickly. Since the attainment of the proper temperature in a wireless lighter is not accompanied by any increased load in the current supply line, the ideas set forth in this patent could not have helped in the solution of Mead's problem.

Hadaway No. 1,046,777 (application filed 1909—R. 326-334): This patent shows an electric sadiron having a spiral thermostat 4 controlling a switch arm 12 controlling a regulating resistance 6. Should the current be left on too long, the arm 12 by engaging a contact 16 closes a circuit through a special resistance within the thermostat to increase its heat and thereby accelerate the operation of the thermostat and the movement of the arm 12 until a latch 23 is engaged by the latter and a hand resettable switch 21 is opened. It is a safety device operating under abnormal or emergency conditions, and simply another example of a thermostatic control applied in a special way to solve a specific problem.

Ovington No. 1,141,576 (application filed 1912—R. 336-339): This patent shows a portable heater having an enclosed heating element to be inserted in a vessel of water to heat it. When the water has been brought to the desired temperature, steam rising in the pipe 20 operates a diaphragm 42 which moves a catch 31 to release an ejector pin 26 which separates contacts 25-26 from current supply socket contacts 39-40 to interrupt the circuit.

Ovington did not control the opening of the circuit in response to the temperature of the resistance, and his solution of his problem could not have been of any help to Mead.

Maple No. 1,261,256 (application filed 1914—R. 342-345): This is another example of an overload switch thermally operated. The construction of Maple's switch is intentionally such that the breaking of the circuit will not occur for momentary high overloads. Such a slow-acting

overload switch could not be used to advantage in a cigar lighter, first because there is no problem of overload and, second, because the delayed action would not be needed or wanted in a cigar lighter.

Cavanagh No. 1,294,045 (application filed 1918—R. 348-351): Cavanagh discloses an ignition switch for an automobile which includes a removable member or key 8 which, when placed in position, closes the ignition circuit. The plug-like key is held in circuit-closing position by a detent 19 carried by a bimetallic bar 9 wound with a resistance 10. The construction and operation of Cavanagh is rather complicated, but it is sufficient to note Cavanagh's explanation:

> "If the circuit remains closed for a *dangerous length of time*, as predetermined upon, coil 11 heats the bar 12 sufficiently to cause it to make contact with the terminal 13 for the secondary heating coil 10, which latter then quickly heats up the thermostatic bar 9 to such an extent as to cause said bar to release the plunger and allow the spring contact to separate from the stationary contact and thus break the ignition circuit." (R. 350, lines 64-74; emphasis ours).

The thermostatic control of Cavanagh is, therefore, merely a time switch, the resistance coils 10 and 11 serving the sole function of heating the bimetallic members and predetermining the *length of time* before the opening of the circuit by the amount of heat generated in and conducted to the thermostatic bar 9 by the heating coil 10.

The teaching of Cavanagh of the use of a bimetallic switch operating after a predetermined time and not responsive to the temperature of a working resistance coil could not be of assistance in the making of the Mead invention or in the combination evolved by Mead.

Pelton and Hand No. 1,397,777 (application filed 1920—R. 354-356): This patent is for a thermostatic switch construction and is illustrated for use in connection with

a sterilizer. The switch has an actuating rod *l* (see Fig. 3) which moves a contact *i* into engagement with contacts *g* in which position a toggle *p-o* is straightened out and holds the circuit closed. When the sterilizer is hot enough, a thermostat *r* engaging an arm *s* throws the toggle over and permits the plunger *l* to return. All that can be said for the Pelton and Hand patent is that it shows a toggle-like thermostatic control switch. Mead did not employ such a switch—neither did respondent.

Webster No. 1,400,646 (application filed 1920—R. 358-361): This patent shows a heater for a hot water bottle in which the heating elements 12 and 14 are contained within the stopper for the bottle. A thermostat 19 in the stopper controls the opening and closing of a branch of the circuit in accordance with the temperature of the stopper. The arrangement is such tha "some current is still allowed to flow after the contact poi ts 22 and 23 are separated" (p. 2, column 1, ll. 50-52). Nothing in the disclosure of Webster would be suggestive of the use of a thermostat in a cigar lighter or could have been of the slightest help to Mead.

Campbell No. 1,416,263 (application filed 1921—R. 364-367): This patent is for an electric fireless cooker. It has a thermostat 5 controlling a switch arm 10 which is moved to closed-circuit position by a rod 12. The arrangement of the thermostat and switch is to meet the particular needs of a fireless cooker, and the essence of the invention seems to be the operation of the thermostat by heat escaping through a conduit 4 leading from the chamber. There is nothing about this patent to suggest the use of a thermostat in a cigar lighter or to teach how it could be done.

Donle No. 1,431,220 (application filed 1921—R. 370-372): This patent shows a fuse-replacing plug-type circuit breaker in which an excess amount of current in passing through the device heats the bimetal strip 2 and permits it to pass the catch 4 to permanently open the circuit. Outside of

details which could not be of any assistance in making a cigar lighter, this patent has no more teaching than the 1893 lightning arrester of Hammarstrom.

Leeb No. 1,530,730 (application filed 1921—R. 382-386): This patent shows a thermostatic switch particularly adapted for use in an electric stove. The circuit is closed by operation of a button 40 maintained closed by a latch plate 41 and released by a thermostat 20 when the stove becomes *overheated*. There is no attempt to control the temperature of the stove or the heating elements thereof, except to prevent overheating. Aside from details of construction which do not lend themselves to use in a cigar lighter, this patent teaches no more than Hammarstrom, *i. e.*, the permanent opening of a circuit against automatic resetting under the control of a bimetal strip operating when excessively heated.

Norden No. 1,556,246 (application filed 1922—R. 388-391): This is an example of the use of a bimetallic latch in a lamp socket. The latch is formed of a bimetallic strip 22 wound with a resistance wire 25 which, upon operation of the switch, becomes heated gradually, and thus opens the circuit to the lamp sometime after the lamp switch has been operated, so that one might leave the room after operating the switch and before the light is turned off. In a wireless cigar lighter, the circuit should be opened immediately upon the heating element reaching the desired temperature for use and in accordance with the temperature. The disclosure of Norden could not have been of assistance to Mead either in suggesting the idea that a thermostat be used in a cigar lighter or how it could be done.

Haugh No. 1,563,854 (application filed 1922—R. 394-397): This is a thermostatic switch plug for use with sadirons and the like. The operating knob 24 is held in closed circuit position before it is released and automatically

moved to open-circuit position upon overheating which might be injurious to the iron or to the materials or objects with which they may be associated in use. This is merely a safety device and does not suggest any control of the temperature of the iron.

Reid No. 1,565,499 (application filed 1921—R. 400-402): This is another type of thermostatic switch illustrated for use on electric irons. The thermostat 35 when excessively heated releases the latch 34 and permits the circuit to be opened between the contacts 31 and 33. This is a mere safety device.

Aichele No. 1,614,169 (application filed 1925—R. 404-410): This is another type of circuit breaker suitable for use in place of a fuse. It has a bimetallic strip 21 holding a button 17 depressed so that the circuit is closed between the bar 28 and the contact 32. An overload or short circuit current passing through the device will release the button 17 and open the circuit.

Sandin No. 1,630,358 (application filed 1922—R. 412-415): This is another thermostat circuit breaker for use in place of a fuse—this being particularly adapted to replace a cartridge fuse. It contains nothing in the slightest degree suggestive of the desirability of controlling a cigar lighter by thermostatic means, or how it should be done.

Arnesen No. 1,689,007 (application filed March 24, 1926—R. 418-423): This is another electric iron plug having a thermostat control for opening the circuit upon overheating. The circuit is closed by operation of a push button 32, and it includes a latch 34 controlled by a bimetallic strip 43 which causes the circuit to be opened when the plug becomes overheated. There is nothing in this patent to suggest the use of a thermostat in a cigar lighter, or any details of construction which might be used for the purpose.

Carmean and Carmean No. 1,780,462 (application filed 1926 —R. 426-429): In this patent the circuit is closed by pushing the spring 22 upwardly through the medium of the button 38 until it latches on the latch 25. It remains in this position until a bimetallic member 34 pushes the end of the spring away from the latch 25 so that the spring returns to open-circuit position. The switch parts of this device are extremely simple, but it is not apparent how the disclosure of this patent could have suggested anything with regard to cigar lighters, except, possibly, a specific switch construction if that switch construction proved, upon experimentation, to be satisfactory. In connection with this patent, it should be noted that it did not issue until November 4, 1930, and was not a teaching reference as against Mead.

It seems clear to us that the Seventh Circuit Court of Appeals erred when it held that "the same principle of thermostatically disconnecting the circuit had been used in the manufacture and use of electric irons, and the like", for in not one of these prior art patents is the thermostat operated to permanently open the circuit solely by and in accordance with the temperature of the resistance and when the resistance reached a predetermined temperature at which it is to be used.

Mead's Combination Is Not Suggested by the Prior Art.

The patents above reviewed show many different appliances and devices with thermostatic controls—each organized and having a mode of operation calculated to solve a particular problem.

Thermostatic controls, like vacuum tubes and transformers, are "tools" in the electrical art, like levers, gears, etc., in mechanics; and no one may rightfully patent *their use*, for any particular purpose. But, many valuable inventions have been made and patented, making use of these various tools of the art in new combinations.

This is exactly what Mead did. His *conception* involved the broad idea of incorporating a thermostatic control to perform, with associated parts, wholly new functions in a wireless cigar lighter, *i. e.*, that of relieving the operator of the necessity of manually holding the plug in closed-circuit position, and that of automatically and permanently opening the circuit when the igniter coil is hot enough and ready for use. In doing so, his *act* involved the making of a new combination as explained above, having an entirely different mode of operation from any thermostatically controlled electrical device or any wireless cigar lighter then in existence. Either of these differences, under the present circumstances where the advantageous results of the new combination and the new services it renders are so striking, would be sufficient to confer patentability on Mead's work.

Mead's combination was different from any prior thermostatic device, because in Mead the effective operation was placed under the sole control of the temperature of the working resistance, *i. e.*, the resistance that performs the work for which the device is intended. In every prior device having a thermostatic control, either the operation of the thermostat was placed under the control of some other thing, such as the sole plate of an electric iron, or of an auxiliary resistance whose only function was to operate the thermostat *after the lapse of a predetermined time*, or of abnormally heavy surges of current.

The mere use of a thermostat in a wireless cigar lighter would not necessarily produce Mead's combination. This is demonstrated by the work of Smith in England and Rupps in Germany just after the time Mead made his invention.

The Smith British patent No. 285,200 of 1928 (R. 481): This did not issue until 1928, and hence is not prior art (Rev. Stat., §4923; 35 U. S. C. A., 72). It has an igniter member 25 having an igniting coil 26 and is removably mounted on

a holder or base plate 15. An ungrounded contact 27 on the igniter normally engages a contact 28 on the holder, and this is connected to a switch lever 19 having a contact 29 which, when the switch lever is pushed in, engages a live contact 18 to close the circuit to the igniter, the other side of the circuit being suitably connected to the battery. The operator, after pressing in the lever 19, continues to hold it in manually during the heating-up period and until the igniter coil 26 is incandescent, whereupon he releases the lever 19 and may then remove the igniter for use.

Smith used thermostats 1 and 2 to open the circuit of his wireless lighter when, through lack of attention, the operator held the circuit closed too long by continuing the pressure on the manually operated switch lever 19. His is a mere safety device. His combination does not automatically hold the circuit closed; it does not insure bringing the heater to just the right temperature for use, but only opens it if the igniting resistance gets so hot as to be dangerous; it is a "hunting thermostat" and does not *permanently* open the circuit as in Mead, because it closes the circuit again when the temperature falls.

Rupps British No. 298,073 of 1929 (R. 493): Like Smith, this patent is not prior art against Mead, but it does illustrate another method of manually closing the circuit. In this patent, the igniter coil *k* is mounted in the igniting unit *e* which is removably supported on a holding device *a*. Contacts *b* and *c* on the holding device are normally out of engagement with contacts *f* and *g* on the igniter. To close the circuit, the igniter *e* is rotated to align the contacts *b* and *f* and *c* and *g* in which position the igniter is allowed to remain while heating-up. To open the circuit in this particular instance, the igniter is manually rotated from closed-circuit to the open-circuit position.

Rupps in this British Patent (R. 493) used a thermostat *l* in his wireless cigar lighter, yet he did not make Mead's combination. Rupps' combination simply *keeps* the igniter

coil hot by a hunting thermostat once the circuit is manually closed by rotation of the igniter. There is nothing to open the circuit permanently when the proper heat has been reached, or to deliver—so to speak—a plug when prepared for its function.

Separately Smith and Rupps seemed to have been inspired with the nebulous idea (such as Mead must have been at first) of employing a thermostat in a wireless cigar lighter. But that is as far as their imagination went toward Mead, for they merely used the thermostat to protect the resistance coil from burning out; they did not conceive of the making of the lighter automatic, relieving the operator of the necessity of holding the circuit closed manually and releasing it when ready for use.

So, it is clear, both as to the prior art and as to contemporary improvers, that Mead alone hit the solution which many had sought.

Mead's Invention Was Not Obvious.

"The invention all admired, and each, how he
To be the inventor missed; so easy it seemed,
Once found, which yet unfound most would have thought
Impossible." —Milton.

Viewed in retrospect, it is now quite easy to say that the next step when Mead entered the field was to make the wireless cigar lighter thermostatically controlled. But before Mead, it would have taken a prophet to name the next step, for nothing pointed the way, and those working in the art were certainly not even facing in the right direction. Those who came nearest though later (Smith and Rupps British patents) were quite astray of the "logical" result.

As shown, thermostatically controlled electrical devices were quite well known at the time Morris first made the wireless cigar lighter in 1919, and it may be fairly asked why Morris did not make Mead's invention while he was about it. Hammarstrom and the rest were known, and these, it is argued, teach all that had to be known to make Mead. Many of the non-automatic devices were sold and put into use, yet no one took the last step, until Mead came.

Assuming that Morris was not advised on thermostatic controls, then was Zecchini likewise uninformed, or Casco, petitioner's licensee, or Cuno, petitioner in Case No. 37, or respondent? They were in this very business, yet they did not see the thing that—when seen—was adopted. The answer is clear that it did not occur to any of these, that by going to the thermostatic control art and picking out a suitable thermostat and then making certain modifications and changing the principle of operation, the wireless cigar lighter could be so changed that the improved lighter when offered to the public would make practically obsolete all other lighters. Eventually someone might have thought of it, but Mead was the first and was way ahead of the rest of the art. As a result of Mead's timely invention, we have been given the benefit of an automatic wireless cigar lighter and the public will have free use of the same when Mead's patent expires on November 19, 1946. It is pure speculation to deny that, if it had not been for Mead, the automatic lighter might still be unknown and we would still be putting up with the nuisance and danger of the manually operated lighter.

Copeland Did Not Have the Mead Invention.

Copeland's applications (March and April, 1927) were filed a few months prior to Mead's filing date. However, the Copeland patents (R. 483-492) were not published until 1931-1932 respectively, long after the Mead application was filed, the Mead device marketed and the patent

issued, and the only defense available in relation to Copeland is that of the alleged prior knowledge and invention of something as evidenced by the filing dates of the Copeland applications.

Mead provides a properly heated incandescing body to be held in the hand of the user for application to a cigar or even a pipe held in the mouth. Copeland provided the user with a stationary device having an opening into which a cigar or cigarette could be pushed against the incandescent wire, which might light if either cigar or cigarette were long enough and did not break. It could not be used for a pipe.

To be sure, Copeland had a cigar lighter with a thermostat, but there was no removable igniter unit or plug for use in lighting a cigar or a pipe or anything else and movable to energizing position such as characterizes a wireless lighter as such as specified in Mead's claims. Copeland devices were not "wireless" cigar lighters at all, because during the period of lighting a cigar or cigarette the igniter coil was included (wired) in the electric circuit.

Referring particularly to Copeland, No. 1,844,206 (application filed April, 1927—R. 440): This is the final form. It has a socket 11 in which there is an igniter resistance 14 pivotally mounted on a base of ceramic material 15 and held in normal position by a snap spring 23. When the cigar or cigarette is dropped in the socket 11 and thrust down by the user, the unit pivots and causes the spring 23 to snap over toward a thermostatic bar 24 placed in the energizing circuit and carrying a contact which engages the contact 28 to close a circuit from the battery 25 through the igniter resistance coil 14. In a modified form shown in Fig. 6, Copeland provides a separate push button for causing the spring to buckle and close the circuit, thus avoiding the necessity of pressing on the end of the cigar or cigarette—which might easily impair the end thereof.

The circuit is held closed by the buckling spring 23 until, after the lapse of a predetermined time, the thermostatic

bar 24, due to its bimetallic nature, expands and pushes the buckling spring back across its center line.

The automatic operation of the device has nothing whatsoever to do with whether or not the cigar or cigarette is lighted, except to give it time to light, or whether or not the igniting coil 14 is hot enough to light the cigar. The period of operation is controlled by an extra resistance, not designated by a reference character, which is wound about the thermostatic bar 24 and which is in the circuit including the bar. The resistance on the thermostatic bar is so arranged that it gradually heats the thermostatic bar and is so proportioned that after the lapse of time which should be enough to light the cigar or cigarette, it has deformed the bar 24 sufficiently to cause the buckling spring 23 to snap back to the position shown in Figs. 2 and 6 (R. 442, ll. 37-45). The cigar or cigarette is ignited by the rush of air across the igniter coil 14 and the end of the cigar, for which purpose the tube is provided with apertures 18 and 19 and baffle 21, see Fig. 6.

Since the igniter resistance 14 does not depend upon its mass to store heat for subsequent use as in a wireless cigar lighter, it may be made of ordinary resistance wire as is shown which would quickly come to incandescence.

The delay in opening the circuit controlled by the thermostat 24, therefore, is to give the *cigar* time to ignite, and not as it might in a wireless cigar lighter to give the resistance coil time to store sufficient heat. This would lead in a path away from a wireless cigar lighter rather than toward it.

In his other patent No. 1,838,363 (application filed March, 1927—R. 432-438) Copeland shows another cigarette lighting device. The cigarettes are taken from a dispenser and dropped into position to be engaged by an igniter resistance 27, the circuit for which is controlled, as to the length of time it remains closed, by a thermostatic switch shown in Fig. 10, like the thermostatic switch shown in Copeland No. 1,844,206.

The differences between Mead and Copeland may be stated categorically as follows: Mead's is a "wireless" cigar lighter having a removable member serving the functions of a match brought to the cigar, cigarette, pipe, or other object to be lighted; Copeland's is a self-lighter serving the function of a stove into which the cigar or cigarette must be inserted, and which could not be used at all for lighting a pipe. When the cigar is being lighted, in Mead the circuit is open; in Copeland, the circuit remains closed. In Mead the energizing circuit is opened as a result of the igniter coil reaching a predetermined temperature, regardless of the time required; in Copeland the circuit is opened as a result of the lapse of a predetermined time, regardless of the temperature of the igniter coil. Mead controls the opening of the circuit by heat from the igniter coil (responsive to the temperature of the heating unit, Cf. claims 2 and 3); Copeland controls the opening of the circuit by heat from a separate coil acting entirely independently of the heat from the igniter coil. Mead's device is essentially heat controlled; Copeland's device is essentially time controlled (R. 442, ll. 37-45).

These differences establish the fact that Mead's invention is distinct from Copeland in structure and mode of operation, in the services and functions performed and results produced.

As found by the District Court in the present case (R. 241):

> "Defendant introduced in evidence various patents as showing the state of the art prior to Mead's patent but in the brief relies principally on the Copeland patents Nos. 1,844,206 and 1,838,363. These patents do not perform the same service, nor operate in like manner as the invention of Mead."

On the other hand, the Court of Appeals with respect to Copeland, after, we respectfully submit, a play on words

with regard to our use of the term "wireless", said (112 F. 2d. 335 at 341; R. 511-512):

> "But even so, we think Copeland is an automatic wireless cigar lighter. It is not only wireless in the popular sense, but it is plugless. It provides for the insertion of a cigar in the socket instead of a plug, and the cigar is lighted before it is withdrawn from the socket. The cigar is inserted in a tubular guide and thrust inwardly until the circuit is connected, at which time the end of the cigar rests upon the heating unit, which heating unit remains in the socket. The connection is held until the heating unit becomes incandescent, and the cigar is lighted, at which time the *heat from the heating unit operates the thermostat to release the cigar and its guide from the heating unit and they return to their normal position.*" (Emphasis ours.)

This clearly indicates that the Court of Appeals did not understand the construction and mode of operation of Copeland's device, for it is absolutely incorrect to say that "the heat from the heating unit operates the thermostat". The heating unit in Copeland does not operate the thermostat (Cf. lines 29-31, R. 441). Again, the thermostat does not release the "cigar, and its guide from the heating unit" or anything else. The cigar is never held or detained, and, therefore, cannot be released, the guide is not movable at all and the cigar remains on the heating unit until removed by hand. It may be burned up or spoiled.

With such a misunderstanding of Copeland, it is no wonder that the Court of Appeals in this case held (112 F. 2d 335, at 341; R. 512):

> "All that Mead did was to cause the thermostat to operate on the plug in effect the same as Copeland permitted it to operate on the cigar."

If this were so, then Mead would have had a mere timing thermostat and not one responsive to the temperature of

the heating unit as called for by claims 2 and 3. Obviously, Copeland's thermostat is not responsive to the temperature of the cigar, which it would have to be, to be at all analogous to Mead.

With Copeland, it is not a matter of the temperature of the igniter, but the length of time it is kept *hot* during which the cigar or cigarette is ignited by the draft across the igniter coil and the end of the cigar (Cf. R. 442, ll. 8-13).

So far as the record shows, or we know, no one ever made commercially a wireless cigar lighter with a thermostat operating on the *time principle* of Copeland—certainly respondent here, and petitioner in Case No. 37, did not. Mead did not use it, and they did not adopt it; rather (and for good reasons) they adopted Mead's arrangement of controlling the circuit in response to the temperature of the igniter coil. As the Court of Appeals for the Second Circuit said (117 Fed. 2d 361, 363) "Copeland's invention was still-born".

One cannot borrow a part from Copeland and parts from other members of the prior art to make a synthetic Mead for two reasons: The first is that each of these things is sufficient in itself to carry out whatever the inventor in each particular patent was trying to accomplish; the second is that each is a complete lighter of its own sort, good or bad, but none involved Mead's idea. Therefore, by putting any two together Mead's idea and its fulfilment are not attained. Besides his contemporaries Rupps and Smith in England did not accomplish what Mead did—each went his own way, which was in a different direction from Mead. Mead borrowed from none.

Commercial Use of Mead's Invention.

The Casco Automatic Wireless Cigar Lighter.

The automatic cigar lighter of Casco Products Corporation, petitioner's licensee, was placed on the market in 1936 and sold extensively (Pl. Ex. 3, offered R. 29). Pl. Ex. 3A (offered R. 66) fairly illustrates the construction of this device which is also substantially shown in the Cohen patent 2,117,232 (R. 465). The holder is provided with bimetallic fingers serving as detents and contacts to engage the shell surrounding the igniter coil which is carried by the igniter plug. When the plug is pushed in, a spring is tensioned at the same time that the contact moves into engagement with the fingers resulting in the closing of the circuit through the resistance, a flange on the igniter also contacting a tongue on the shell of the holder to complete the circuit.

When the igniting unit becomes properly heated for use, the heat therefrom causes the bimetallic fingers to lose their grip on the contact and permit the spring to return the plug to open circuit position whereupon the plug may be removed for use.

It will be seen that the commercially successful Casco device embodies the Mead invention. The igniter being moved to energizing position is retained in that position until the igniter coil is heated up and heats up the heat-responsive detents, whereupon the circuit is automatically opened and remains open by reason of the return of the circuit-closing contact to normal position.

The Accused Sinko Automatic Wireless Cigar Lighter.

In making its automatic wireless cigar lighter, respondent, who had bought the Zecchini patent (R. 374), chose to make the lighter of the general type shown by Zecchini, that is to say, of the type in which the circuit is closed and

opened within the igniter plug itself as distinguished from between the igniter and the holder as in Morris (R. 545).

In the accused device (Pl. Ex. 2, offered R. 29 and animated model Pl. Ex. 18, offered R. 21) instead of having a push button such as Zecchini shows, respondent made the igniter body of two relatively movable parts—one part on which the igniter coil is directly mounted, and the other part having the protruding knob or handle. These parts are provided with cooperating contacts to engage when the knob is pushed in. The contact on the knob is in the form of a collar button while the contact on the igniter coil is in the form of a bimetallic latch contact. When the knob is pushed in, the circuit is closed between the collar button contact and the bimetallic contacts, and these hold the two parts together until the bimetallic contacts are heated by heat coming from the igniter coil and gradually lose their grip on the collar button, whereupon a return spring between the two relatively movable parts pushes the knob out to open circuit position, and the operator, who has been free to use both hands to operate the vehicle during the heating-up period, reaches over and removes the igniting unit from the socket to apply it to a cigar, cigarette or pipe to light the same.

Thus, in respondent's device, we find the same mode of operation as in Mead, and the same results being obtained and in substantially the same way, the mechanical or structural differences between Mead and the accused Sinko device being mere matters of mechanical detail not affecting function.

As a matter of fact, Casco had developed and patented in the Cohen patent No. 2,140,311 and Johnson patent No. 2,129,374 some of these refinements. But, as to these and respondent's accused device, the trial Court below held (R. 241):

> "Defendant's device and the devices covered by the Cohen patent No. 2,140,311 and Johnson patent No.

2,129,374, were merely improvements and refinements upon the Mead invention which would naturally be developed by those skilled in the art."

In Mead, it will be recalled that when the circuit is closed there is relative movement between two parts of the holder—the base and the socket rotatably mounted on the base; while in the Sinko cigar lighter there is relative movement between two parts of the igniter—the knob and the heating resistance coil. Obviously, these are not differences of substance, and while respondent has urged that the Mead claims must be construed to cover the movement of the entire plug from open- to closed-circuit positions, the language of the claims does not so require. In each of the claims, the removable heating member is the body of the plug, and the heating unit or heater is the resistance coil. When the claims speak of the movement, however, they speak of the movement of the heating member, *i. e.*, the movable body. Giving the words of the claims their ordinary meaning, it seems clear to us that the claims read on respondent's device.

Cuno Automatic Wireless Cigar Lighter.

The Cuno automatic wireless cigar lighter, which is substantially the same as the Casco and accused Sinko cigar lighters, held by the Circuit Court of Appeals for the Second Circuit to infringe the Mead patent, is before this Court in the *Cuno* case, Case No. 37.

Evidence Demonstrates that Mead's Invention Was Not Obvious.

It seems highly improbable that anything which has effected a revolution in an old art, as Mead did with the automatic wireless cigar lighter, could have been obvious. The question naturally arises, "Why, if it was obvious, was it not done before?" That it was not obvious is evidenced by a number of persuasive considerations:

(a) Evidenced by Lapse of Time: The Morris patent for the wireless cigar lighter was applied for in 1919, and manual wireless lighters were extensively used as shown above, yet it was not until some 6 or 7 years after Morris' invention that it occurred to anyone at all that the nuisance and danger of holding the igniter plug in during the heating-up period could be done away with, or that the regulation of the heating of the igniter coil could be so controlled that it always would be at just the right temperature for use when taken from the holder. Even during the years 1927 and 1928 immediately following Mead's invention when the manually operated wireless cigar lighter had the market, it did not occur to those immediately concerned, such as petitioner's licensee, Casco Products Corporation, respondent here and petitioner in Case No. 37, to devise means to make the wireless lighter automatic.

The patented combination was not sufficiently obvious to be recognized by the respondent or anyone else before Mead, and this condition existed even as to petitioner's licensee, Casco Products Corporation, until Mead's device came to Mr. Cohen's attention in 1929 after Mead made his device and so filled a long felt but undefined need.

> *George Frost Co. et al.* v. *Cohn et al.*, 112 Fed. 1009, 1011.

The effect of the passage of time after need or demand arose and before the invention was made is well known to this court.

> *Barbed Wire* case, 143 U. S. 275, 283; 36 L. Ed. 158.

(b) Evidenced by Apparent Non-Utility: The tendency of logical deduction was against the conception of the thermostatically controlled lighter. Thermostatically controlled devices were known, operating on the principle of opening a circuit permanently when the device got too hot, or opening the circuit after the lapse of a predetermined time. Logical deduction, if the matter had been thought of at all, would have led to the belief that the safety factor of such thermostatic controls was not necessary since the igniting unit was held in by hand anyway, and theoretically at least the operator would not continue the manual operation of holding the circuit closed any longer than, he would think, necessary. The manufacturer would not be inclined to discern the utility, adaptability and advantage. This is emphasized by the fact that even after Mead marketed his invention on a small scale and when later petitioner's licensee, Casco Products Corporation, marketed its adaptation of the Mead invention on a larger scale, infringement did not begin at once but resulted from the force of public demand upon competing manufacturers. The logical tendency was to accept the nuisance and inconvenience of the non-automatic lighter which had been quite well developed, which could be manufactured with much less precision and care, and which was being accepted by the public.

(c) Evidenced by Respondent's Misdirected Efforts at Improvement: The record shows that even after Mead's invention, the respondent continued to make and sell manually controlled wireless lighters until 1938 (Rec. pp. 91, 99, 100) when the demand forced it to come out with the accused device.

In 1937, after Casco's automatic wireless cigar lighter was placed on the market and was being well received (R. 75), respondent (R. 104 and 105) attempted to market a so-called instantaneous wireless cigar lighter in which a thermostat cut an auxiliary resistance into the circuit

to prevent the quick heating resistance coil from burning out if the operator should hold the plug in too long. Apparently respondent was still unconvinced that Mead was the true solution of the problem. It was only when that failed to divert the market that the infringement began.

(d) Evidenced by Misdirected Efforts of Others: This point has been covered in detailed discussion of the various prior art patents, and it is sufficient here to recall that when Smith (R. 485) in England later attempted to make a wireless cigar lighter automatic he did not evolve Mead's combination, and when Rupps (R. 493) in Germany later likewise attempted to make a wireless cigar lighter automatic he did not produce Mead's combination. Both of these were practically contemporaneous with Mead. When Copeland attempted to make a cigar lighter automatic by the use of a thermostat he did not make Mead's combination, but, rather, produced a lighter operating under an entirely different principle, *i. e.*, a self-lighter for cigars and cigarettes, not a wireless lighter (*supra*, p. 33).

(e) Evidenced by Changes Required in Existing Things to Make Mead's Combination: No thermostatic control of the prior art without change could be added to any wireless cigar lighter of the prior art without change to make Mead's combination. The igniter knob had to be changed so that it would stay in closed circuit position, and the thermostat had to be changed to be heated by and to be responsive to the temperature of the working resistance, *i. e.*, the glow member, and release the knob when the resistance was at the desired temperature.

(f) Evidenced by the Fact that to Return to the Non-Automatic Lighter Would be a Retrogression: Obviously, a cigar-smoker would not accept a non-automatic lighter after having had the automatic electric lighter using

Mead's invention, for it would be a retrogression to discard the automatic for a non-automatic.

O'Rourke Engineering Co. v. McMullen, et al., 160 Fed. 933, at 938 (C. C. A. 2nd Cir.).

(g) Evidenced by Commercial Success: Commercial success is frequently advanced on the point of invention and lack of obviousness. Generally this is so secondary to a publicity campaign in advertising as to lose its force. Here there is no such showing of such "prodding" (R. 74-75). Nevertheless, as shown by the chart (Pl. Ex. 19, R. 71), the Casco automatic wireless cigar lighter embodying Mead's invention has enjoyed phenomenal commercial success even though these were sold for from 10c to 15c apiece more than the manual wireless lighters (R. 272, 273). Its customers are the hard fisted automobile manufacturers —not the supposedly gullible public (R. 75). In a few years, it practically displaced the non-automatic lighter, and the competitors of petitioner's licensee, Casco Products Corporation, were forced to furnish an automatic wireless cigar lighter in order to maintain their trade.

It seems to us that every factor tending to support patentability of Mead's claims as he made them is present in this case.

The Law as to Patentability.

It has been demonstrated by the application of tests as to invention laid down by the courts that Mead's invention, in his limited field, required that degree of ingenuity which the courts have come to require as the test of patentability. Degree of invention or ingenuity is not a test contemplated by the Constitution and the patent laws to determine whether or not an invention or discovery shall receive protection.

The Constitution (Article I, Sec. 8, Clause 8) provides:

> "The Congress shall have power * * * To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries;"

Under the authority of the Constitution, Congress provided (Rev. Stat. §4886; 35 U. S. C. A., §31):

> "Any person who has invented or discovered any *new and useful art*, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor." (Emphasis ours.)

It will be observed that there is no standard or degree as to invention provided for in this enactment of Congress. Congress did provide that the invention shall be "new and useful". No other condition is prescribed.

Congress could have entailed limitations as to the degree of invention to be rewarded by patents but it has never done so.

It has been demonstrated that the device of the Mead patent is "useful" and that it is "new", for no one prior to Mead produced an automatic wireless cigar lighter or the combination of parts for making the same.

The section of the Constitution quoted above provides that authors shall also be given award of a limited monopoly for their works. In the administration of the copy-

right law the degree of originality of the work is not a test of its validity; but, as to copyrights, the only objective test is novelty.

There is no more reason for requiring a certain unspecified degree of originality in connection with an invention than there would be to require a degree of originality in connection with a "book". It may be merely a compilation, as a directory.

While the word "invention" connotes originality it does not involve any idea as to whether a little or much genius is required. Yet, if after the invention is made and known, the problem does not seem to have been difficult of solution so that persons of lesser genius might have contrived them the Courts have frequently held the patents invalid. This is substantially what the Circuit Court of Appeals for the Seventh Circuit did in this case.

The degree of ingenuity, we submit, is not the test. Rather, the test is—is the invention new? In determining invention, novelty does not exist if the elements of the combination cooperate in an *old way*. This is so even if one of the elements is new in the combination, for then the novelty would reside in the element—not in its association with old things. This has been the fault with most patents invalidated by this Court in recent years.

However, if the combination of elements operates on a new principle or has a new mode of operation the invention is novel and patentable. We have been unable to find a single decision by this Court, or by any Court for that matter, in which a patent was held invalid for want of *invention* in which it was recognized that there was a new mode of operation present.

The difficulty comes, of course, in recognizing the new mode of operation. This we submit has been the error of the Circuit Court of Appeals for the Seventh Circuit in the case at bar.

The Decisions of the Courts of Appeals.

The Circuit Court of Appeals for the Seventh Circuit, speaking through Judge Sparks, said (112 F. 2d, 335, at 341; Rec. 511):

> "It is obvious that there is nothing found in defendant's device which is not found in Zecchini, and in Copeland No. 1,844,206, and we think the same may be said with respect to Mead."

This, it seems to us, is tantamount to saying that respondent's construction and Mead's are equivalents, for, if respondent is merely Zecchini and Copeland and Mead is merely Zecchini and Copeland, Mead and respondent must have the same thing. Yet the Court held that respondent does not infringe Mead.

We have treated elsewhere (*supra*, p. 34) with the error of the Court of Appeals in this case with regard to Copeland's construction and mode of operation.

The Court of Appeals in this case further said (112 F. 2d, 335, at 341):

> "Before the Mead disclosure wireless cigar lighters were old, wherein the heating unit was on the end of the plug and the plug was removed for the purpose of lighting the cigar. All that Mead did was to cause the thermostat to operate on the plug in effect the same as Copeland permitted it to operate on the cigar. We do not feel justified in holding that this amounted to invention, in view of the fact that wireless plugs without the thermostat had been used so long, and in view of the further fact that the same principle of thermostatically disconnecting the circuit had been used in the manufacture and use of electric irons, and the like. We think the fields are quite analogous, and since all of Mead's elements were quite old in both fields and

> he made no use of any new principle, we think his disclosures amounted to nothing more than mechanical skill, and we think the claims herein relied upon are invalid."

We have pointed out that the Court erred in assuming that Mead caused the thermostat to operate on the plug in the same way that Copeland permitted it to operate on the cigar (*supra* p. 34); that the Court erred in holding that the same principle of thermostatically disconnecting the circuit had been used in the manufacture and use of electric irons and the like (*supra* p. 26) and that the Court erred in not recognizing that Mead made use of a new principle (*supra*, p. 34).

It seems to us that the views of the Court of Appeals for the Seventh Circuit are adequately disposed of by the decision of the Court of Appeals for the Second Circuit in *Automatic* v. *Cuno*, 117 Fed. (2d) 361, 363, in the following statement by Judge Learned Hand:

> "It must be owned that Copeland's figure six did disclose a lighter, manually operated, which, once put in operation, did not require continued pressure, which automatically cut out the current when the glow member was hot enough, and which advised the user of that fact. Moreover, very few structural changes were necessary to convert this into Mead's lighter. The 'tubular extension 16' (page 1, line 71), which held the glow member, was already removable; it was only necessary to make it accessible to the user and to attach the wiring to the 'tubular guide, 11' (page 1, line 62). When that was done, the holder would become a 'wireless lighter' quite as much as Morris's or his successors'. This is the strength of the defendant's argument which prevailed in the Seventh Circuit (*Automatic Devices Corp.* v. *Sinko Tool & Mfg. Co.*, 112 F. 2d 335) and in the district court.
>
> "Nevertheless, it does not persuade us. Copeland's invention was still-born; it did not lead to the necessary modifications of Morris's lighter, nor did it sugges-

them; it was actually a step away from the 'wireless' plug which is to be taken out, used like a match or a torch, and replaced, and which alone was capable of answering the needs of the art. Nor is it at all relevant that, after one had once thought of applying Copeland's arrangement to the plug type, the structural changes would have been simple. That is never the test; it is the conception that counts, the act of imagination which assembles the elements into the new and fruitful combination; not the working out of details. *Potts* v. *Creager*, 155 U. S. 597, 608, 15 S. Ct. 194, 39 L. Ed. 275; *Regar & Sons* v. *Scott & Williams*, 2 Cir., 63 F. 2d 229, 231; *Patent Royalties Corp.* v. *Land O'Lakes Creameries*, 2 Cir., 89 F. 2d 624, 627; *Kelley* v. *Coe*, 69 App. D. C., 202, 99 F. 2d 435, 440. Complicated machines, which are in the day's work for skilled mechanics, will appear magic to a tyro who may find nothing but the obvious in a combination that has failed of discovery for a decade after the need arose. It would indeed be absurd to rate this as a major invention, yet it did bring to what appears to be its final form a contrivance which had become a standard fixture in motor cars; and upon every detail of these as much human ingenuity has been expended as perhaps on any machine. Just such trifles often help sales; in the severe competition of motor car industry the perfecting of even a trifling furnishing like this may be the object of study and experiment. The art itself shows that this has been true here, as we have already seen; and the best test of what persons of routine ingenuity can do is what they have done. Perhaps, given the same technological stage of development, the same inventions are sure to appear and at about the same time, patents or no patents; but it is certainly unwarranted to assume that the small ones need less stimulus than the great ones; rather the contrary, for minds of the first order are more apt to express themselves without other inducement than the work itself. If patents are to go to those who contribute new appliances that are beyond the limited imagination of the ordinary skilled person, this invention seems to us to merit a patent."

The manner in which the Court of Appeals for the Second Circuit has treated the invention of Mead is supported by the decisions of this Court.

The principle is clearly and forcefully stated in *Diamond Rubber Company of New York* v. *Consolidated Rubber Tire Co.*, 220 U. S. 428, 435, in which the court, speaking through Justice McKenna, said—

> "Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. And it recognizes degrees of change, dividing inventions into primary and secondary, and as they are, one or the other, gives a proportionate dominion to its patent grant. In other words, the invention may be broadly new, subjecting all that comes after it to tribute (*Railway Co.* v. *Sayles*, 97 U. S. 554, 556); it may be the successor, in a sense, of all that went before, a step only in the march of improvement, and limited, therefore, to its precise form and elements, as the patent in suit is conceded to be. In its narrow and humble form it may not excite our wonder as may the broader or pretentious form, but it has as firm a right to protection. Nor does it detract from its merit that it is the result of experiment, and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities he is entitled to the rank and protection of an inventor."

Earlier, this court, in *Potts* v. *Creager*, 155 U. S. 597, 607, speaking through Justice Brown, said—

> "Indeed, it often requires as acute a perception of the relation between cause and effect, and as much of the peculiar intuitive genius which is a characteristic of great inventors, to grasp the idea that a device used in one art may be made available in another, as would be necessary to create the device *de novo*. And this is not the less true if, after the thing has been done, it appears to the ordinary mind so simple as to excite wonder that it was not thought of before. The apparent simplicity of a new device often leads an inexperienced person to think that it would have occurred to any one familiar with the subject; but the decisive answer is that with dozens and perhaps hundreds of others laboring in the same field, it had never occurred to any one before. The practiced eye of an ordinary mechanic may be safely trusted to see what ought to be apparent to every one. As was said by Mr. Justice Bradley, in *Loom Company* v. *Higgins*, 105 U. S. 580, 591: 'Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never attained before, it is evidence of invention.'"

Conclusion.

It is submitted that the Court of Appeals for the Seventh Circuit (like the District Court of Connecticut in the Cuno case, whose decision was reversed by the Court of Appeals for the Second Circuit, 117 Fed. 2d, 361) erred by reading into the claims various details of Mead's specific construction and then holding that as so interpreted the claims were not infringed by respondent's accused device.

Mead's invention is defined in its fundamental aspects by Claims 2, 3 and 11 here in suit. These claims contain no limitations to unessential details shown in Mead's specific disclosure.

In determining the valid scope of Mead's claims, the Court of Appeals for the Seventh Circuit should have followed the rule stated in *Smith* v. *Snow*, 294 U. S. 1, 11, in which this Court, speaking through Justice Stone, said:

> "We may take it that, as the statute requires, the specifications just detailed show a way of using the inventor's method, and that he conceived that particular way described was the best one. But he is not confined to that particular mode of use since the claims of the patent, not its specifications, measure the invention."

As stated by the Court of Appeals for the Second Circuit in the *Cuno* case, 117 Fed. (2d), 361, 364:

> "* * * There is nothing which turns primarily upon the precise details of the structure; the claims are as good as they read, if good at all. We hold that they are valid and infringed."

Our position is entirely in accord with that expression. It is submitted that the Mead claims are valid "as they read", and that the case should be remanded for further proceedings on the issue of infringement, to accord with this Court's decision on the issue of validity, to which the writ of certiorari was specifically limited (R. 570).

Respectfully submitted,

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